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Exploring patient-witnessed CPR in hospitals

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Conflict of Interest

No conflict of interest has been declared by the authors.

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Author Contributions

All authors have agreed on the final version and meet the following criteria recommended by the ICMJE (http://www.icmje.org/recommendations/):

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• drafting the article or revising it critically for important intellectual content.

ABSTRACT

Aim

To explore the experiences of patients and healthcare professionals regarding patients witnessing resuscitation on another patient in hospital clinical wards.

Design

Phenomenological qualitative study.

Methods

Participants will be recruited from nine wards in a university hospital in England. Data collection will include two in-depth interviews with patients who witnessed resuscitation: the first interview one week after witnessing resuscitation and the second interview after one month. Individual and focus group interviews with healthcare professionals will be also conducted. Data will be transcribed, managed in NVivo 11 and analyzed using phenomenological analysis. The National Health Service, Health Research Authority and University Ethics Committee approved the study (May 2018). The study is funded by Resuscitation Council UK (December 2017) and will be conducted between May 2018 and March 2019.

Discussion

While witnessed resuscitation is a major topic of interest in nursing, specific research on the impact of patients who witness resuscitation on fellow patients is limited. This study will use qualitative methodology to inform the evidence base of a clinical problem with limited understanding. The findings of this study will contribute to the framework of witnessed resuscitation and to identifying the barriers and enablers towards a greater support of patients

who witness resuscitation in hospital. This new acquired knowledge will be beneficial for the improvement of future nursing care.

Impact

The evidence gained from this study can support the development and implementation of guidelines and inform hospital policies to support patients witnessing resuscitation to optimize the quality of nursing care provided.

SUMMARY STATEMENT

Why this study is needed:

- Evidence on the impact of witnessing resuscitation in hospital is limited and is mostly focussed on family members witnessing the resuscitation of a relative.
- Experiences of patients and current practices of healthcare professionals on patient-witnessed resuscitation need to be explored to understand this phenomenon.
- The study represents a unique opportunity to explore the views of patients, nurses and allied healthcare professionals of an understudied topic and may inform advanced clinical nursing practice related to the support of patients in hospitals.

KEYWORDS

Hospitals, patients, nursing, resuscitation, cardiopulmonary resuscitation, heart arrest, qualitative research, interview, focus group.

INTRODUCTION

Cardiopulmonary resuscitation (CPR) is recognized as a near-universal first aid technique (Whitcomb & Blackman, 2007), undertaken when an individual's breathing or heartbeat has stopped. Cardiac arrest is a major public health problem worldwide, resulting in damaging consequences not only for the survivors, but also for their families and the health care systems (Attin, Tucker, & Carey, 2016). Incidence of in-hospital cardiac arrests continues to be rarely reported (Nolan et al., 2014; Sandroni, Nolan, Cavallaro, & Antonelli, 2007) and not uniformly across countries. A review of international studies of in-hospital cardiac arrests reported an incidence range of 1-5 per 1000 patients admitted (Sandroni et al., 2007). More recently, the National Cardiac Arrests Audit data of in–hospital cardiac arrests in 183 acute hospitals of the National Health Service (NHS) in the UK documented 16,210 in-hospital cardiac arrests, meaning 1.5 cardiac arrests per 1000 hospital admissions in 2017 (NCAA, 2017). In the US, the American Heart Association documented an incidence of 209,000 in-hospital cardiac arrests in 2016 (American Heart Association, 2016), although the denominator is unclear. These data indicate that there is the potential for patients to witness CPR during a stay in hospital.

It is recognized that although lifesaving and associated with an increasing survival rate (Bergum, Nordseth, Mjølstad, Skogvoll, & Haugen, 2015), CPR represents a stressful procedure that may be linked to unsuccessful outcomes (Nolan et al., 2014; Zijlstra, Beesems, De Haan, & Koster, 2015). Therefore, witnessing resuscitation could have effects on a large

audience, including family members, healthcare professionals and fellow patients. While aspects of family witnessed resuscitation have been explored, evidence on the impact of patient-witnessed resuscitation appears limited. This study aims to address the knowledge gap on witnessed resuscitation and extend understanding of the experiences of patients witnessing fellow patients' resuscitation in hospital, to inform future clinical interventions and research studies.

Background

Witnessed CPR is a controversially debated issue gaining attention in the international nursing research agenda (Köberich, 2018). Walker (2006) defined witnessed resuscitation as "the experience of having been 'witness to' a resuscitation attempt in which the witness (or bystander) performed an active or passive role (or) the experience of being 'witnessed by' others whilst applying the skills of resuscitation" (Walker, 2006, p. 385). Traditionally, since the first pioneering research into family participation during resuscitation conducted by Doyle et al. (1987), the "witnesses" under study were mostly the family members of patients undergoing CPR. This aspect of witnessed CPR has been extensively explored from different perspectives: the relatives' and patients' opinions have been investigated and they are overall favourable towards family presence during CPR, as this seems to help relatives to cope with the grieving process and gives patients a sense of support (Albarran, Moule, Benger, McMahon-Parkes, & Lockyer, 2009; Bradley, Keithline, Petrocelli, Scanlon, & Parkosewich, 2017; De Stefano et al., 2016; Paplanus, Salmond, Jadotte, & Viera, 2012). Healthcare professionals' attitudes and concerns have also largely been explored. Although multidisciplinary consent is growing towards the presence of family members during resuscitation, many clinicians do not feel sufficiently confident to fully support this practice

and barriers still exist, as the fear that relatives might interfere with the CPR procedures and influence the resuscitation performances (Chen et al., 2017; Fulbrook, Albarran, & Latour, 2005; Paplanus, Salmond, Jadotte, & Viera, 2012; Sak-Dankosky, Andruszkiewicz, Sherwood, & Kvist, 2014). Another aspect that has been explored is witnessed resuscitation by proxy, especially as portrayed by media. Television is a major source of information about CPR (Diem, Lantos, & Tulsky, 1996), potentially a powerful tool for education (Lockey, 2014) and can influence the way a resuscitation event and its consequences are perceived by the public. Although depicting CPR on television may initially have helped the public familiarizing with the fact that such events may occur in hospital (Grice, Picton, & Deakin, 2003; Hadfield-Law, 1999), recent studies showed that the portrayal of CPR on television is still far from reality. Considering that the public is significantly influenced by medical TV series, this may link to falsely high expectations of short and long-term success of CPR, to misinformed public CPR knowledge and may influence care decisions (Alismail, Meyer, Almutairi, & Daher, 2018; Colwill et al., 2018; Harris & Willoughby, 2009; Portanova, Irvine, Yi, & Enguidanos, 2015). Nonetheless, as reminded by Köberich, our view on those affected by witnessing resuscitation is still narrow (Köberich, 2018).

A smaller number of research studies have explored the concept of witnessed resuscitation from the perspective of fellow patients. A recent systematic review on the impact of patients witnessing CPR on another patient highlighted that the literature on the topic is sparse, of low quality, and mostly outdated (Fiori, Latour, & Los, 2017). Only five articles were identified documenting some sort of physiological and psychological impact in patients witnessing CPR. In particular, increased heart rate (Bruhn, Thurman, Chandler, & Bruce, 1970; Sczekalla, 1973), systolic blood pressure and anxiety (Bruhn et al., 1970) were observed in the study group witnessing resuscitation. Coping strategies in response to witnessing resuscitation, including denial and dissociation were highlighted among the qualitative studies (Badger,

1994; Hackett, Cassem, & Wishnie, 1968; Isaksen & Gjengedal, 2006). The findings of this systematic review, although limited and weak, suggest that patients may find witnessing resuscitation a stressful experience. Combined with the lack of recent studies, this evidence underlines a gap in the current knowledge of witnessed resuscitation from the other patients' perspective and their needs for support. The findings of the study described in this protocol could contribute to expand the concept of witnessed resuscitation from a different perspective and generate an evidence base to improve hospital care practice.

Patient and Public Involvement (PPI) and clinical nurses consultation

Formal PPI and stakeholder consultations were undertaken with people with heart disease and hospital nurses involved in CPR to inform the design and the development of the present research study. The PPI consultations were organized based on the NIHR *Patient and Public Involvement in Health and Social Care Research: A Handbook for researchers* as guidance (NIHR, 2014) and the INVOLVE *Briefing notes for researchers* (INVOLVE, 2012). Using an exploratory approach, a qualitative online survey (n=22) and semi-structured telephone interviews (n=4) were conducted among former patients who are members of the British Heart Foundation (BHF), a UK charity, and a focus group was organized with nurses (n=15) involved in CPR in an acute hospital. The consultations were conducted between February and June 2017.

Overall, all participants considered this research would be of value to inform patient-witnessed CPR support guidelines and important to raise clinicians' awareness on this topic. Participants also highlighted a number of suggestions, considered by the researchers and included in the development of this study protocol. The main suggestions from patients regarded: the need of witnesses to talk about their experience, hence the potential relieving value of the interview itself; the emotional impact of witnessing CPR, therefore the provision

of emotional support after the interview; the differences in patients' medical conditions and personal background, thus flexibility on time and venue in interview scheduling. Nurses emphasized recruitment strategies; the adoption of multiple data collection methods to explore their experiences, as focus groups and individual interviews, was suggested to increase the chance of participation.

A PPI advisory group involving the BHF members who participated in the telephone interviews was established. This group is currently engaged in the research and contributed to the revision of the study protocol, the interview guides and the information material for the study participants.

THE STUDY

Aim

The aim of this study is to investigate the impact of patients witnessing a CPR attempt on another patient and to identify the best support that can be delivered to patients by healthcare professionals. Specific objectives are:

- To explore the experiences of hospital patients witnessing a CPR attempt on another patient;
- To identify the experiences of healthcare professionals involved in CPR and the support they provide to patients who witness CPR.

Methodology

This study will adopt a qualitative research design using a phenomenological approach. Given the limited evidence available on the topic of patient-witnessed CPR, qualitative

methods are considered well suited to understand the experiences of patients witnessing CPR and of healthcare professionals caring for them. Qualitative research methods in fact, allow a higher degree of flexibility in data collection and a full range of responses, without being driven by pre-defined quantitative measures (Bryman, 2016).

Following Husserl's philosophical approach, phenomenology aims to understand the meaning of human lived experiences about a phenomenon. Beyond this, as a research method greatly applied in nursing research (Dowling, 2007), phenomenology generates methodical, systematic, critical and intersubjective knowledge (Giorgi, 1997). The proposed method involves the description, reduction and the search for essential structures of the phenomenon investigated (Giorgi, 2000).

The involvement of patients, public, and nurses has been considered an essential aspect of the overall development of the study, from prioritising the research questions to future application in practice of the new acquired knowledge. In particular, the initial engagement with BHF former patients and clinical nurses provided a valid contribution to the conceptual design of the study. Ongoing engagement is intended to gain continuous feedback along the whole delivery of the study, up to the dissemination of the findings (INVOLVE, 2012; NIHR, 2014).

Participants

Two participant groups were identified to address the aim of the study: hospital patients who witnessed CPR on other patients and healthcare professionals involved in CPR in hospital wards. According to the literature on qualitative methods for phenomenological studies, a criterion-based purposive sampling strategy will be used, where all individuals studied meet a certain criterion defined in advance by the researcher or have experienced the phenomenon under study (Braun & Clarke, 2013; Creswell, 1998; Holloway, 1997). In this study, the

criterion for sampling is: to have witnessed CPR on other patients for the patients group; to have been present during a CPR event in their ward for the healthcare professionals group.

Patients

The researcher will conduct in-depth interviews to gain insight from the participants. Following guidelines of qualitative research, which generally consider 5 to 25 participants to provide sufficient data (Creswell, 2003), a sample up to 15 participants will be considered representative for this study. Included patients should:

- Be over 18 years old; able to communicate in English;
- Have had experience of witnessing a CPR attempt on another patient in the ward in which they were admitted at the time of the event;
- Be able to give written consent.

Patients under 18 years of age and patients not able to provide informed consent, as per Mental Capacity Act (2005), will be excluded from the study.

Most clinical wards in the hospital have between 26 to 29 beds and are arranged in multi-bedded rooms with two to six beds. The nine wards with the highest incidence of cardiac arrests, where it is more likely that patients will witness CPR procedures, will be selected to conduct the study. Recruitment will be through the cooperation between the resuscitation team, the clinical care team of the wards, the local research nurse and the research team, based on a shared recruitment flowchart (Figure 1). The ward managers will make a blueprint of the multi-bedded room at the moment of the CPR event. In addition, the records of the CPR performed in the hospital will be shared regularly between the resuscitation team and the research team. Eligible participants will be identified by the local research nurse among the patients who witnessed CPR, based on the blueprint.

Healthcare professionals

Focus group and individual interviews will be conducted with healthcare professionals involved in a CPR attempt, including nurses, doctors, healthcare assistants and other healthcare professionals. Up to 20 participants across focus group and individual interviews will be considered appropriate to gain rich and sufficient data. Sample size will include four to eight participants for each focus group interview. In literature, three to six focus groups are considered appropriate for a medium-sized research project (Braun & Clarke, 2013). Three focus group interviews will be conducted with healthcare professionals. A specific focus group will be conducted with members of the resuscitation team of the hospital, to set their experiences and views aside from the rest of professionals and avoid undue influence. The other two focus groups will be conducted with professionals from different wards. As advocated by the stakeholders' consultation, it is anticipated that not all those who are willing to participate in the study will be able to join a focus group. Hence, researchers will conduct individual interviews, besides focus groups, for those wishing to participate. It is anticipated that approximately six to eight individual interviews will be conducted.

Healthcare professionals included in the study will:

- Be nurses, doctors, healthcare assistants and other healthcare professionals.
- Have >6 months of clinical experience;
- Have been present during a CPR event in their ward in the last 6 months.

The ward managers will facilitate the recruitment of potential participants for the focus groups and the individual interviews, liaising between the research team and the healthcare professionals in their wards. The study will be also advertised through the hospital staff bulletin to increase visibility and engagement.

Data collection

Patient interviews

Two in-depth interviews will be conducted with every participant to explore the experience of patients. The first interview will be conducted up to one week after the CPR event and is designed to capture the initial impact of witnessing CPR. The second interview will be conducted four to six weeks after the event and will explore any sustained impact of the experience. Both interviews will follow an interview guide. The interview questions constitute an invitation for participants to share their experience with the researcher in an open and supportive way, leaving them free to unfold their story as they prefer. The researcher will follow the development of the discussion using prompts when necessary, ensuring a sensitive and empathetic approach. Before the interview, the researcher will ensure that participants feel comfortable to be interviewed and after the interview emotional support will be offered, if needed.

The interviews will take place in a comfortable environment at the convenience of the participant: a hospital quiet room or area in the ward, or at the bedside if the participant is still admitted in the hospital. A quiet place, either at participant's home, at the hospital or at the university, will be chosen if the participant has been discharged. All attempts will be made to maximise privacy and reduce interruptions. Each interview will last 40-60 minutes. Interviews will be audio recorded and non-verbal cues will be documented as field notes.

Healthcare professional focus groups and individual interviews

Focus group sessions will be conducted by the researcher and an observer/note taker of the research team. Discussion will be facilitated through a few open questions to generate a debate about similarities and differences in the participants' opinion and experiences about their practice towards other patients during a CPR event. Individual interviews will be conducted by

the researcher. Individual and focus group interviews will follow an interview guide. Focus group and individual interviews will be audio recorded and visual cues will be documented as field notes. Demographic and professional information from participants will be collected. Focus group and individual interviews will be conducted in the hospital, during participants' working hours, according to their availability. All efforts will be made to provide a comfortable environment to facilitate open communication with participants. The focus groups and individual interviews will be expected to last 40-60 minutes each.

Data analysis

Qualitative data from the individual and the focus group interviews will be transcribed and processed in QSR International NVivo 11, a qualitative analysis software program, and analysed through phenomenological analysis.

The phenomenological analysis method consists of five essential steps (Giorgi, 1985, 1997; Giorgi & Giorgi, 2003), described as follows:

1. The researcher will read and re-reads the entire text to get a general sense of the whole experience of witnessing resuscitation.

2. The researcher will then divide the significant text segments into "meaning units" keeping the participants' own words. The researcher will next eliminate redundancies and relate the meaning units to each other and to the overall sense of the experience.

3. The researcher will read all the meaning units again and compare and discuss them with the research team. The research team will convert the row text meaning units in agreed codes that describe significant aspects of the experience.

4. The researcher will categorize the phenomenological codes into main themes, and cluster similar subthemes into the related main themes.

5. Finally, the researcher will develop an overall description of the essence of the participants' experience by merging the main themes and the subthemes in a flowing narration.

A coding framework will be developed iteratively by reading, coding and revising each transcript and it will be discussed and agreed among the research team. Potential themes and subthemes will be also verified by a further researcher to ensure rigour and accuracy of the interpretation of the findings. Data collected from patients' interviews and from healthcare professionals' individual and focus group interviews will be analysed and reported separately. During this process, some of the patients and healthcare professionals involved in the study will be invited to read the findings and to reflect on the preliminary findings. In the final stage of analysis, findings will be again shared with them to reflect on the final narration of the phenomenon and encouraged to provide advice for further refinements.

"Bracketing", intended as setting aside all researcher's prejudgments, is a fundamental strategy in phenomenology. For the purpose of this study, bracketing is considered essential to initially set researcher's prejudice aside and not to influence the narrative process. However, the iterative nature of data collection and data analysis of the research study may not make bracketing feasible throughout the entirety of the study phases. The researcher will take self-reflective notes during the data collection and data analysis phases to help the bracketing process, reflecting critically on her own beliefs and position in the research. The researcher will then integrate the field and self-reflective notes in the data analysis to reflect on the analysis process and support the interpretation of the participants' answers.

Demographic data will be analysed through descriptive statistics, in terms of prevalence, mean, median and standard deviations using IBM SPSS Statistics 24 software package.

Ethical considerations

The study protocol was approved on 2nd May 2018 by the National Health Service Health Research Authority (REC reference: 18/SW/0069; Protocol number: FHHS-218744-MF-202; IRAS project ID: 218744) and on 18th May 2018 by the University Research Ethics Committee (FHHS-218744-MF-202; Reference Number: 17/18-807).

All the efforts will be made to protect the participants and the researchers. This is a central aspect of the study and will be rigorously enforced, according to established ethical framework (Beauchamp & Childress, 2001). The ethical principles regarding studies and research involving human beings stated in the Declaration of Helsinki (2013) were also considered.

Consent, confidentiality and data protection

All participants will receive an invitation letter and a participant information sheet. The study and the implications of participation will be verbally explained by the researcher before providing a written consent form. However, prior to any data collection activity, either individual or focus group interviews, the participant information sheet will be reinforced, the consent form reviewed again and instructions on participants' right to withdraw will be confirmed. Pseudonyms will be allocated in all interviews and transcriptions of data will be anonymized, to ensure confidentiality. Participants' identifiable information will only be used for the purposes of arranging interviews and obtaining signed consent. Demographic data will be aggregated among participants and compiled in tables. Records will be stored securely on a password protected computer and paper copies of the consent form will be stored separately in a locked cabinet, only accessible by the researchers. This information will be held securely for ten years, according to the University Research Ethics Policy.

Risk to the participants

Patients

Witnessed resuscitation may be a sensitive topic for participants to discuss. To safeguard participating patients, before the interview, the researcher will ensure that participants feel comfortable to be interviewed and share their experience. During the interview, participants could ask to pause or terminate the interview at any time, without any consequence. After the interview, participants will have the opportunity to disclose to the researcher about the interview, and if any upsetting and unsettling feelings raised from the interview, they will be signposted to the Pastoral and Spiritual Care service of the trust, after the first interview, and referred to their General Practitioner, after the second interview. Participants will be informed of this possibility in the information sheet, prior to the beginning of the data collection and this will be part of the decision-making process. In line with the NICE guidelines on post-traumatic stress disorder (NICE, 2005), this is a support pathway to facilitate a person's recovery, as advocated by the scope of this research study, to ensure that in case of distress patients receive adequate follow up. If participants express the preference of withdraw from the study, they can do so at any time, before, during and after the interview, without detriment for their care.

Healthcare professionals

The research team is aware that taking part in focus group or individual interviews can evoke emotive thoughts among participating healthcare professionals (Elmir, Schmeid, Jackson, & Wilkes, 2011). If this occurs, the participant can withdraw from the study at any time without detriment. However, the single participants may not be identifiable in the transcribed data of the focus group and therefore, the individual quotations might not be removable. At the end of the focus group or the individual interview, participants will be invited to disclose with the researcher if any sensitive issues have arisen with them from their participation. Participants

will be advised to seek appropriate follow up with the Occupational Health and Wellbeing service of the hospital.

Risk to the researcher

Qualitative researchers could also be at risk of emotional stress (Dickson-Swift, James, Kippen, & Liamputtong, 2008). In the literature, the issue of *'*vicarious traumatization*'* is described as the emotional burn-out caused by immersing oneself into the lived experience that has been difficult to the participant (Elmir et al., 2011). Arrangements for the researcher conducting the interviews to debrief with an experienced researcher will be facilitated. In addition, private time to reflect will be implemented into the research regime post interview. In the case the interviews with patients will be conducted at their home or at a mutually agreed place, the researcher will abide to the University Lone worker policy. A schedule of interviews will be shared with the research team and contact pre and post interview will be made with a member of the research team to ensure no harm has occurred.

Rigour

To ensure the rigour of this study, phenomenological reduction will be undertaken by bracketing past knowledge about the studied phenomenon in order to describe it as it is experienced and presented by participants (Giorgi, 1997). Although the researcher conducting the interviews is inexperienced with respect to the phenomenon investigated, not having had personal experiences of witnessed CPR as a patient nor having been in the situation of caring for patients witnessing CPR on other patients, it is acknowledged that the iterative process of data collection and data analysis will inevitably influence the researcher's opinion. However, the researcher will strive to focus on the stories of participants and on the meanings behind their narratives without prejudgement.

Trustworthiness (Lincoln & Guba, 1985) will be strengthened by ensuring that all the participants' points of view are taken into account and sharing the research findings with the participants, in order to confirm that the researcher has correctly understood their narratives. Moreover, the employment of multiple sources and methods of data collection should support triangulation, resulting in greater confidence of the findings (Gerrish & Lacey, 2010). Field and self-reflective notes will be taken during the data collection and data analysis to enhance transparency and to provide an audit trail of context and how key decisions on interpretation were made (Green & Thorogood, 2018). Finally, the design, the data collection and data analysis processes of the study have been revised by and discussed with the PPI advisory group.

DISCUSSION

The need to move towards a broader perspective of witnessed CPR by conducting scientifically sound studies to address the limited evidence around this topic has been well recognized internationally (Köberich, 2018). Few previous studies have explored the psychological impact of witnessing medical emergencies, including CPR on other patients, using both qualitative and quantitative methods (Badger, 1994; Bruhn et al., 1970; Hackett et al., 1968; Isaksen & Gjengedal, 2006). Other studies have focused on fellow patients' interaction in different hospital contexts highlighting that despite a sense of companionship, the other patient could be cause of distress, especially when witnessing someone being particularly ill (Larsen, Larsen, & Birkelund, 2013). Patients feel emotionally involved with their fellows: the situation of a critically ill patient can impact on the witnessing patient, generating swinging feelings between hope, anxiety and despair (Laursen, 2016). However, the effect of patient-patient interaction in the specific context of CPR events needs to be further explored. This study could provide an insight on such a topic.

Given the potentially sensitive nature of the topic and the explorative approach required to meet the aim of this study, qualitative methods of research are considered appropriate (Elam & Fenton, 2003). Thus, methodological choices and anticipated challenges are addressed. While individual interviews are a traditional data collection method in phenomenological studies, the choice of focus groups in phenomenology requires further justification. Although largely used in nursing, the main critique against focus group in phenomenological research is the loss of the uncontaminated description of the individual experience (Webb & Kevern, 2001). Aware of the debate, the authors believe that in this study, the combined use of individual and focus group interviews could ultimately help in enriching the understanding of the experiences of participants. Even in a group interaction in fact, participants can add their individual insights while sharing it with the other participants and cross-checking for understanding of meanings both among participants and with the researcher (Bradbury-Jones, Smabrook, & Irvine, 2009).

Similarly, the choice of the sample size and the issue of saturation are addressed. One of the criteria used to define sample size was data saturation, intended as 'the number of interviews needed to get a reliable sense of thematic exhaustion and variability within the dataset' (Guest, Bunce, & Johnson, 2006, p. 65). In their experiments with data from in-depth interviews Guest *et al*. (2006) found that around twelve interviews were sufficient to achieve data saturation, given a relatively homogeneous sample and a narrow scope research. Moreover, although sample size uses to vary widely across qualitative studies, small samples of fewer than twenty participants are considered best suited to generate fine-grained data, offering a closer involvement with study participants (Crouch & McKenzie, 2006). Therefore, for the scope of this research and the characteristics of the selected population, sample size appears to be adequately justified.

Furthermore, the potentially sensitive topic of this study leads to some challenges in the interviewing process. Cowles (1988) and Sieber and Stanley (1988) defined a sensitive topic as one having the potential to cause physical, emotional or psychological distress to participants or the researcher. However, knowledge on a phenomenon can only be sought from those whose experience it (Crotty, 1998). In this study, to minimize the risks of emotional burden for the participants, strategies as process consent will be adopted. Process consent consists in the immediate renegotiation of consent as circumstances change or unexpected events occur during the interview (Munhall, 1988). Nevertheless, some literature supports the positive effects of the interviews even on sensitive topics (Lepore & Ragan, 2000). In fact, interviews may prove to be cathartic for participants (East, Jackson, O'Brien, & Peters, 2010). Telling their stories can help the participants to get a sense of relief (Leseho & Block, 2005), and to make sense of the experience (Carlick & Biley, 2004). It could also give the participant a sense of empowerment and of purpose, by contributing to the scope of the research (Beck, 2005; East et al., 2010; Peters, Jackson, & Rudge, 2008). These arguments were confirmed by the PPI consultees, who considered the benefit of communication important and potentially therapeutic, although they stressed the importance to provide emotional support beside the interviews.

Although the challenges that this protocol may presents, this study constitutes an important opportunity to incorporate the perspectives of fellow patients and healthcare professionals into the exploration of the framework of witnessed resuscitation.

Limitations

Cardiac arrests and therefore CPR events are unpredictable in most of the cases. This study will take place in clinical wards in a large hospital, where patients are not necessarily on a continue monitoring. Therefore, the unpredictability of the events and the quick turnover of

patients in the wards may affect patients' recruitment. Further limitations include the voluntary nature of the sample, as usually adopted in qualitative research. This may lead to a possible bias, as only participants with certain characteristics or coping mechanisms may take part in the study. However, keeping the participation voluntary is considered essential to avoid any kind of coercion in participants' recruitment. Finally, practical and logistic challenges are anticipated in the organization of focus groups with healthcare professionals, due to the high workload in the hospital.

CONCLUSION

This study protocol represents one of the first research to thoroughly investigate the phenomenon of witnessed CPR from the perspective of the fellow patients. The paucity of evidence in this specific context underlines the importance of conducting this study to generate new empirical knowledge. It is acknowledged that findings in qualitative research are context-specific and not generalizable to other settings or populations. However, it is hoped that the findings could offer a rich and detailed insight into the phenomenon of patient-witnessed resuscitation and could be beneficial to the development of future guidelines and the improvement of clinical practice. It is also expected that the development of this protocol could provide a base of evidence for further measurements of the phenomenon combined with quantitative methods.

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Figure 1 Recruitment of study participants (Patients group)